FIG. 1

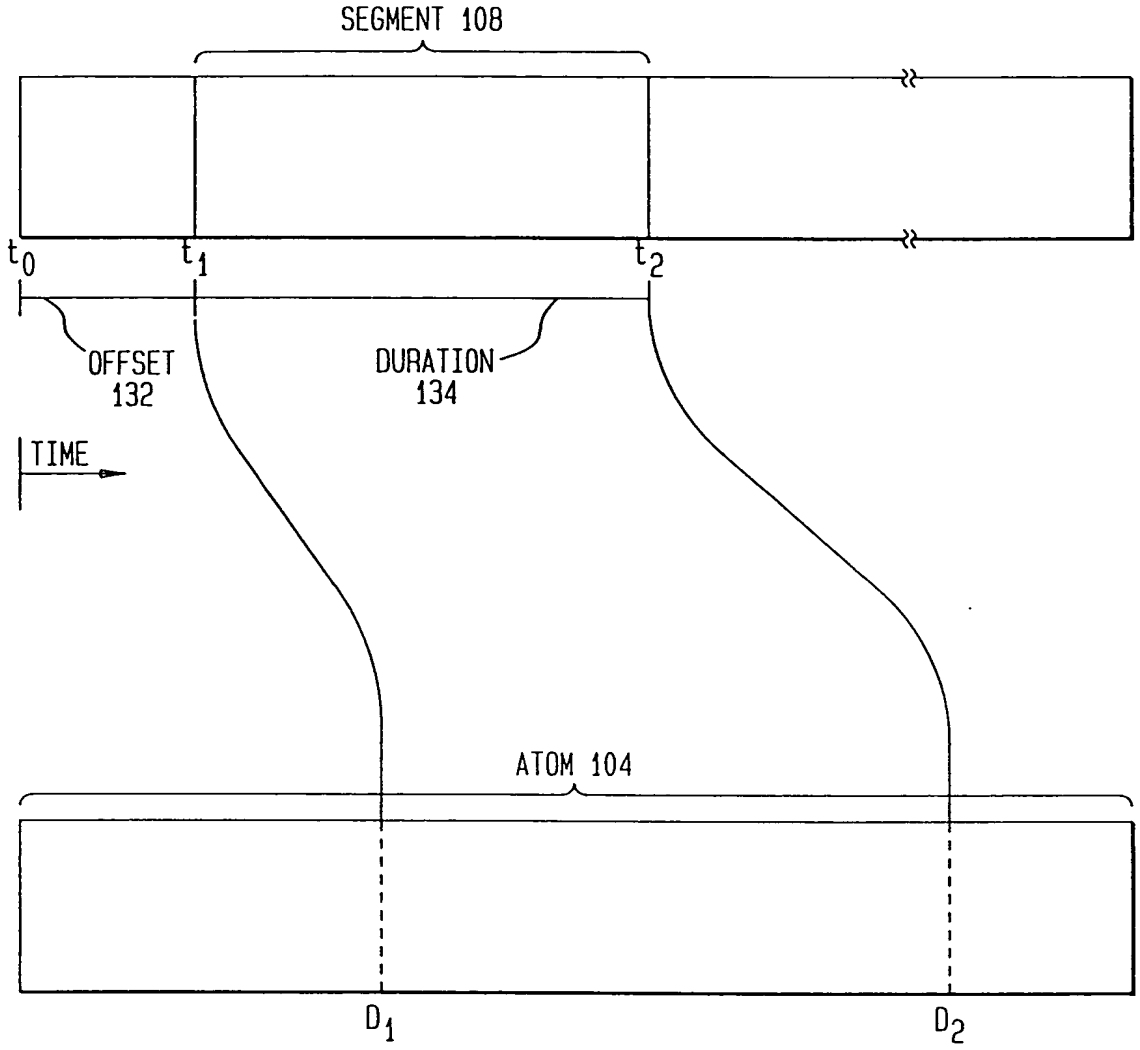

SEGMENT 108
t_0
t_1
t_2
OFFSET 132
DURATION 134
TIME
ATOM 104
D_1
D_2

FIG. 2

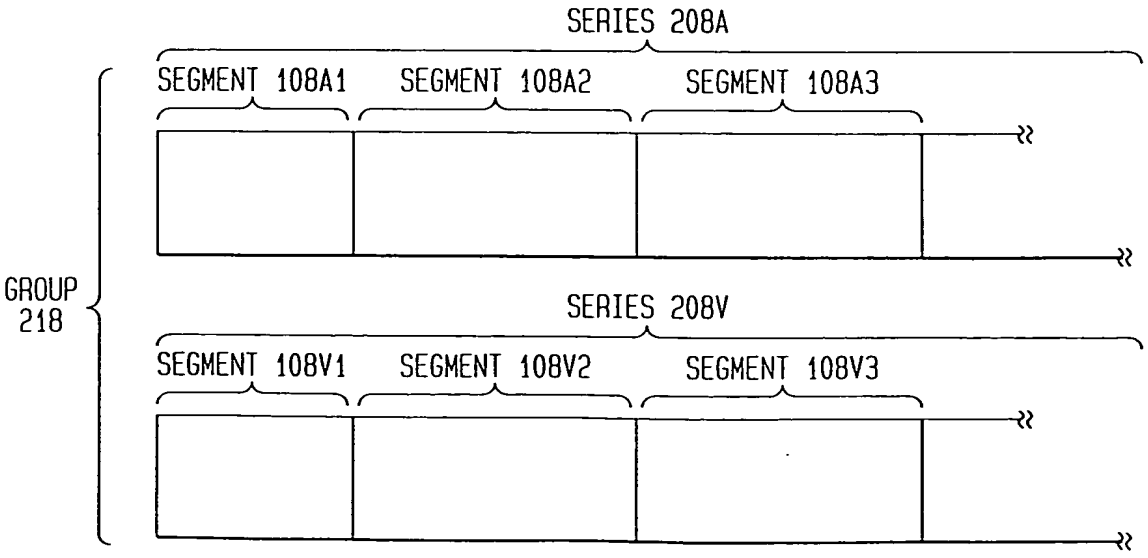

SERIES 208A
SEGMENT 108A1
SEGMENT 108A2
SEGMENT 108A3
GROUP 218
SERIES 208V
SEGMENT 108V1
SEGMENT 108V2
SEGMENT 108V3

FIG. 3

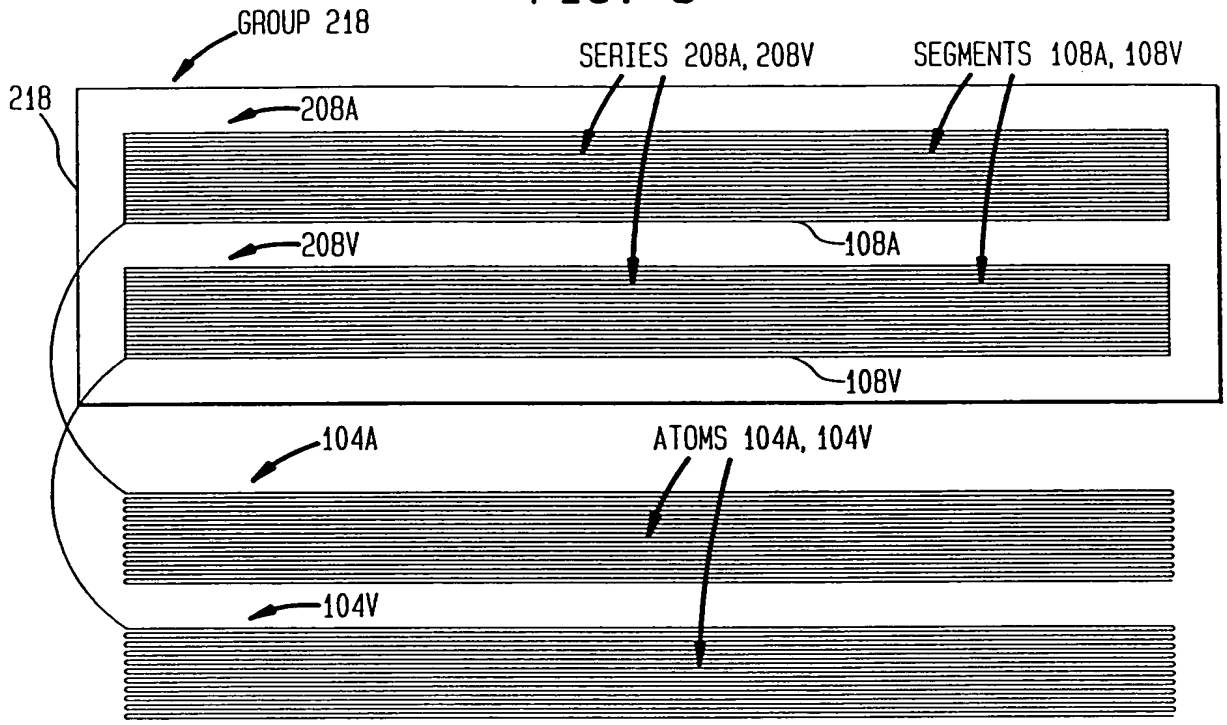

GROUP 218
SERIES 208A, 208V
SEGMENTS 108A, 108V
218
208A
208V
108A
108V
104A
ATOMS 104A, 104V
104V

FIG. 4

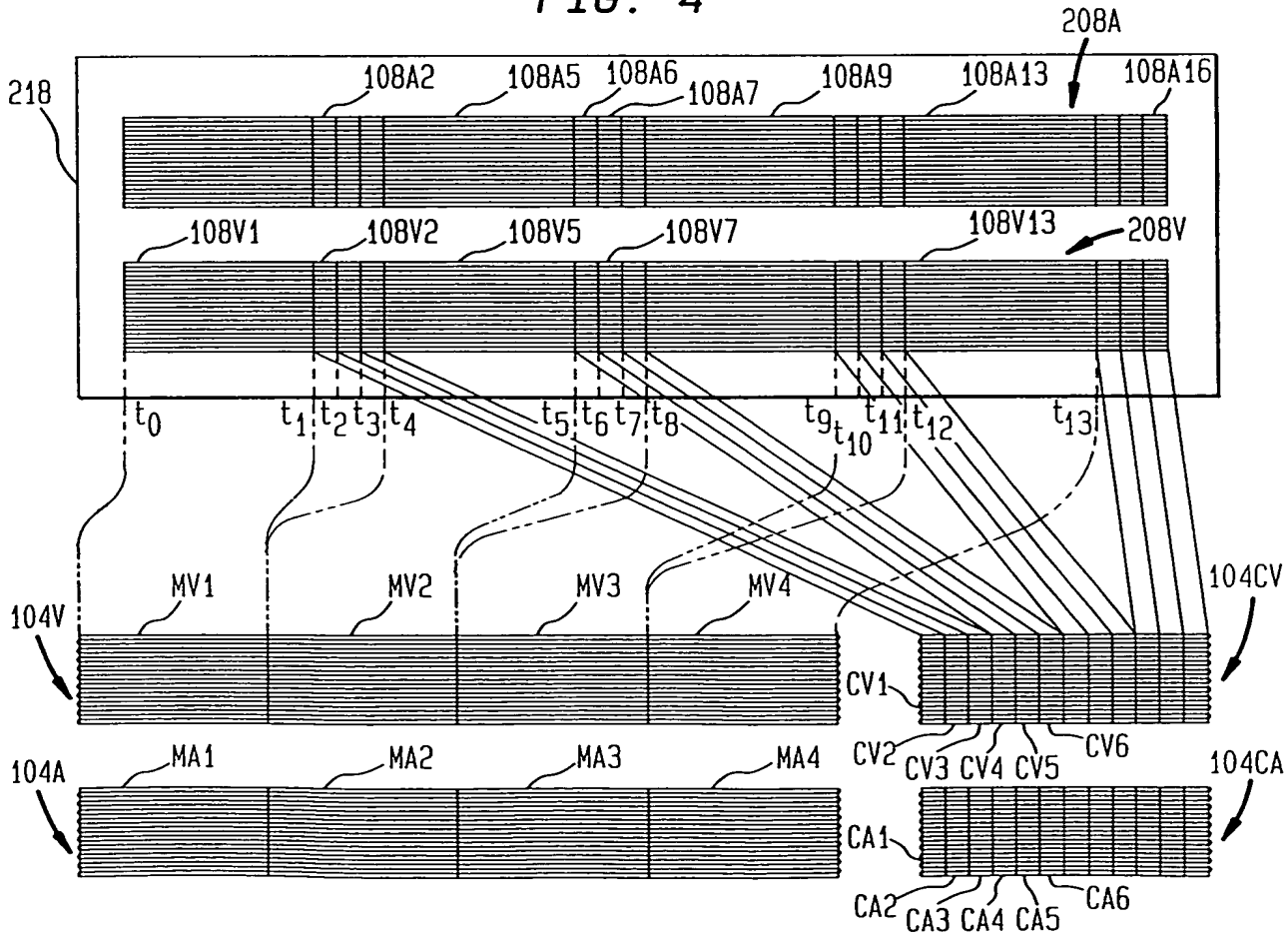

208A
218
108A2
108A5
108A6
108A7
108A9
108A13
108A16
108V1
108V2
108V5
108V7
108V13
208V
t_0 t_1 t_2 t_3 t_4 t_5 t_6 t_7 t_8 t_9 t_{10} t_{11} t_{12} t_{13}
MV1
MV2
MV3
MV4
104V
104CV
CV1
CV2
CV3
CV4
CV5
CV6
MA1
MA2
MA3
MA4
104A
104CA
CA1
CA2
CA3
CA4
CA5
CA6

FIG. 5

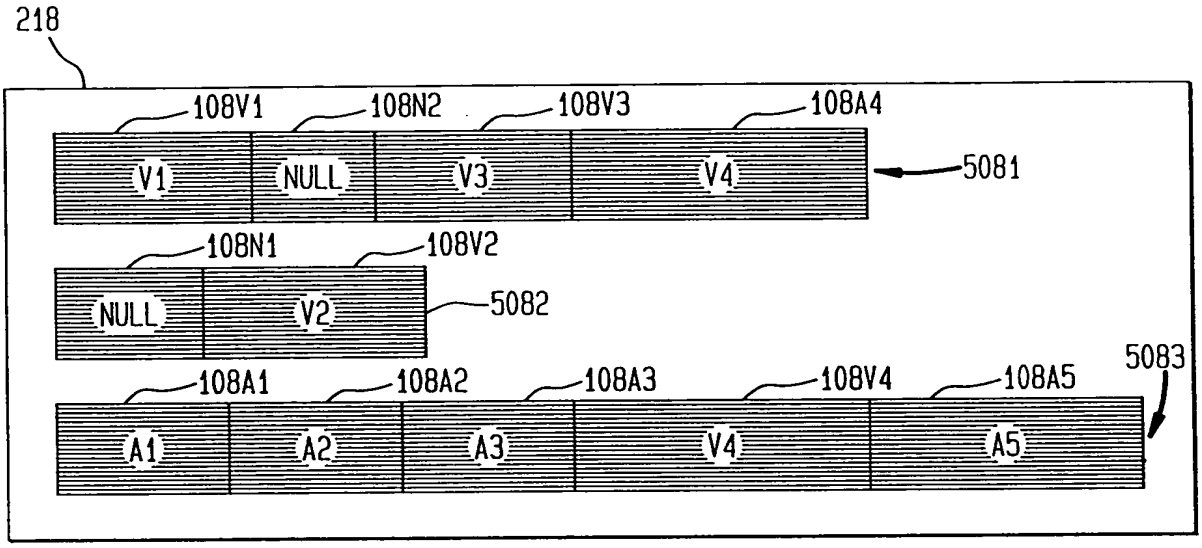

218
108V1
108N2
108V3
108A4
V1
NULL
V3
V4
5081
108N1
108V2
NULL
V2
5082
5083
108A1
108A2
108A3
108V4
108A5
A1
A2
A3
V4
A5

FIG. 6

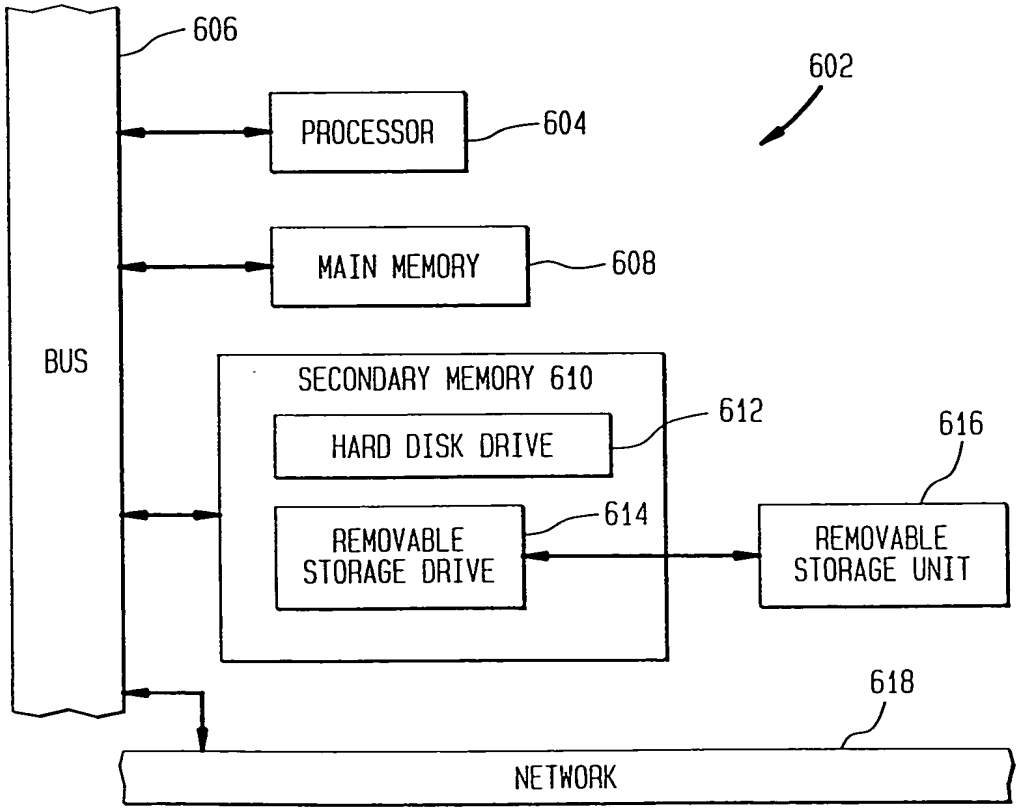

606
602
PROCESSOR
604
MAIN MEMORY
608
BUS
SECONDARY MEMORY 610
HARD DISK DRIVE
612
616
REMOVABLE STORAGE DRIVE
614
REMOVABLE STORAGE UNIT
618
NETWORK

FIG. 7

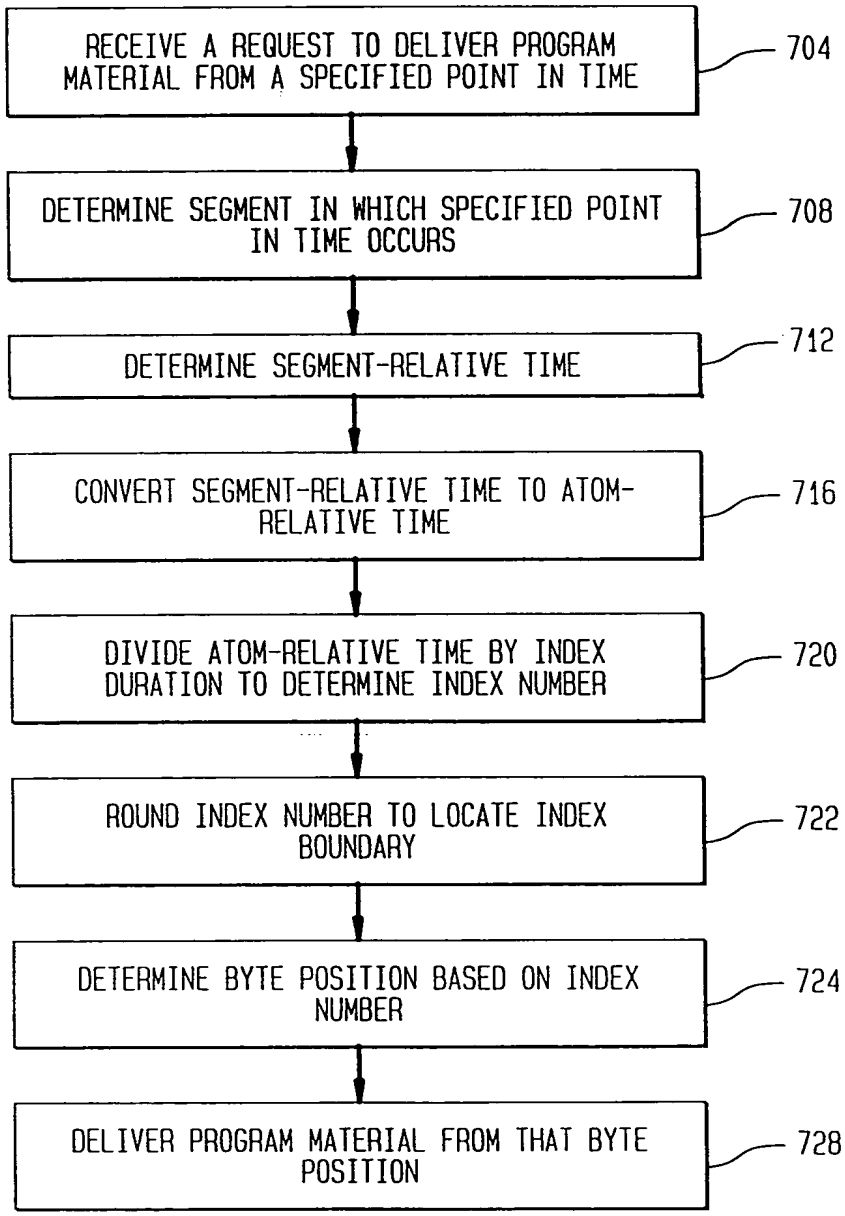

RECEIVE A REQUEST TO DELIVER PROGRAM MATERIAL FROM A SPECIFIED POINT IN TIME
704
DETERMINE SEGMENT IN WHICH SPECIFIED POINT IN TIME OCCURS
708
DETERMINE SEGMENT-RELATIVE TIME
712
CONVERT SEGMENT-RELATIVE TIME TO ATOM-RELATIVE TIME
716
DIVIDE ATOM-RELATIVE TIME BY INDEX DURATION TO DETERMINE INDEX NUMBER
720
ROUND INDEX NUMBER TO LOCATE INDEX BOUNDARY
722
DETERMINE BYTE POSITION BASED ON INDEX NUMBER
724
DELIVER PROGRAM MATERIAL FROM THAT BYTE POSITION
728

FIG. 8

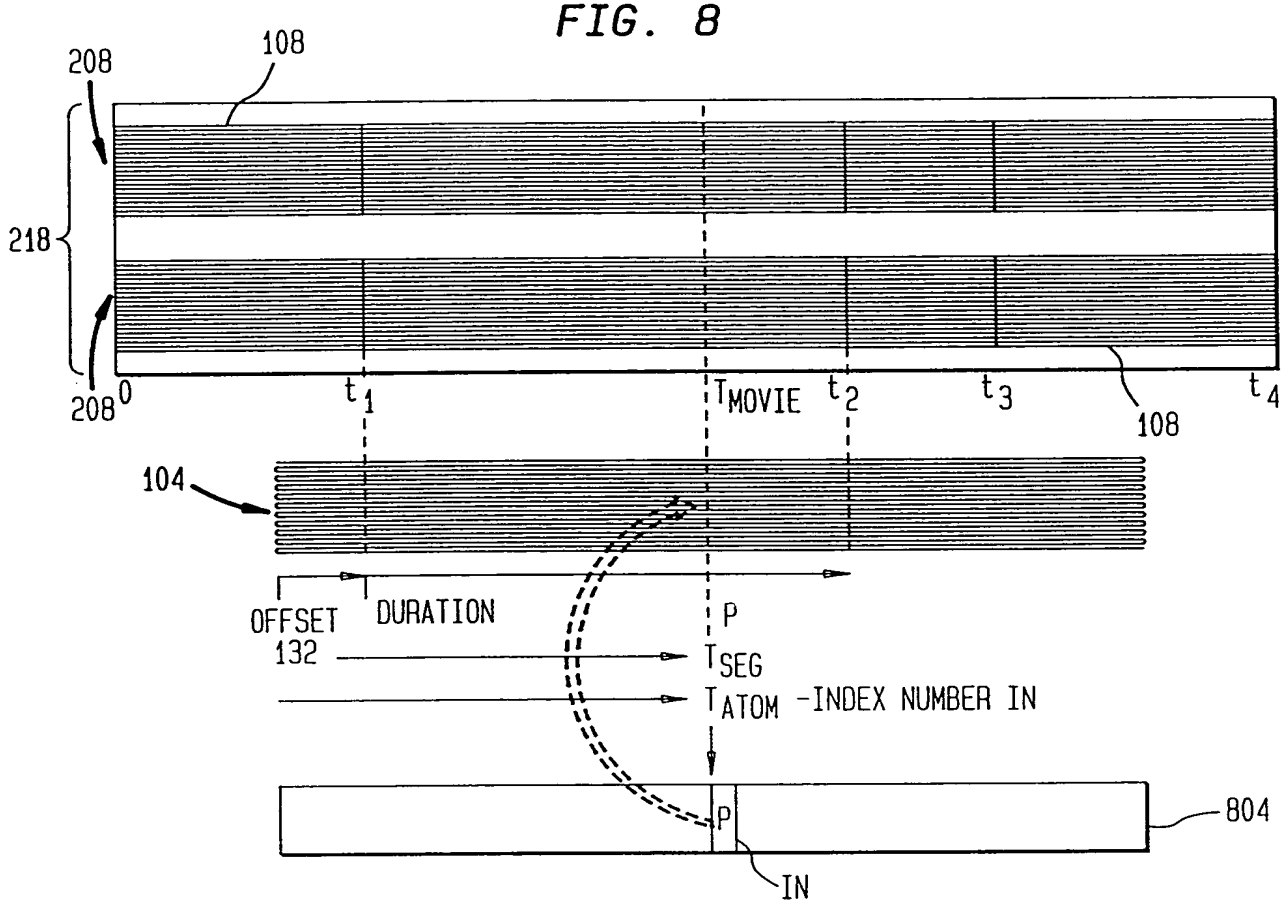

208
108
218
208
0
t_1
T_{MOVIE}
t_2
t_3
t_4
108
104
OFFSET
DURATION
P
132
T_{SEG}
T_{ATOM} -INDEX NUMBER IN
804
P
IN

FIG. 9

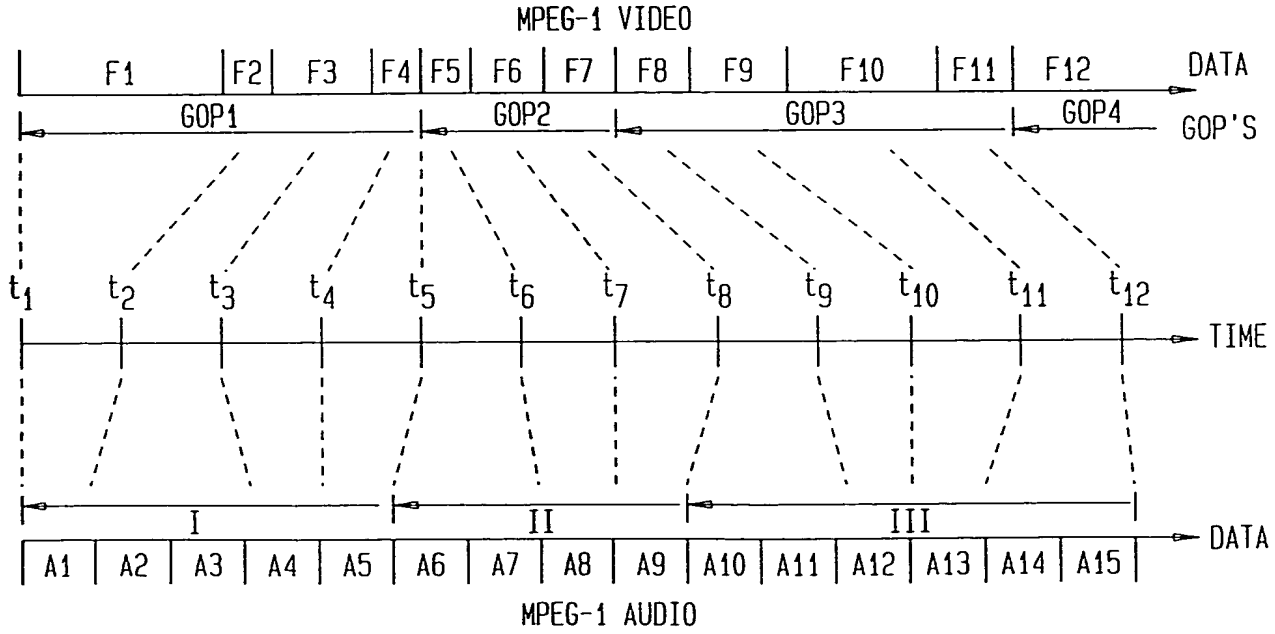

MPEG-1 VIDEO
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
DATA
GOP1
GOP2
GOP3
GOP4
GOP'S
t_1
t_2
t_3
t_4
t_5
t_6
t_7
t_8
t_9
t_{10}
t_{11}
t_{12}
TIME
I
II
III
DATA
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
MPEG-1 AUDIO

FIG. 10

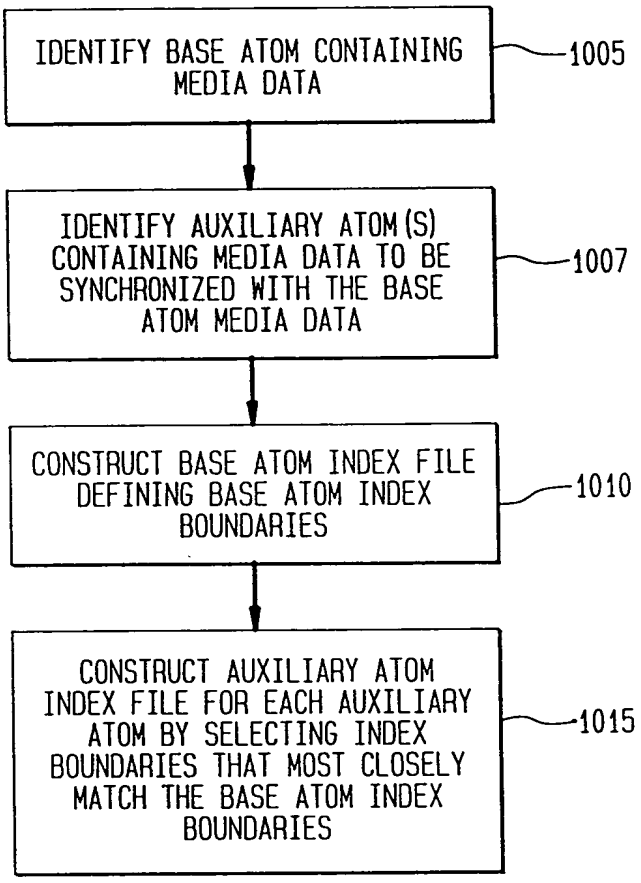

IDENTIFY BASE ATOM CONTAINING MEDIA DATA
1005
IDENTIFY AUXILIARY ATOM(S) CONTAINING MEDIA DATA TO BE SYNCHRONIZED WITH THE BASE ATOM MEDIA DATA
1007
CONSTRUCT BASE ATOM INDEX FILE DEFINING BASE ATOM INDEX BOUNDARIES
1010
CONSTRUCT AUXILIARY ATOM INDEX FILE FOR EACH AUXILIARY ATOM BY SELECTING INDEX BOUNDARIES THAT MOST CLOSELY MATCH THE BASE ATOM INDEX BOUNDARIES
1015

FIG. 11

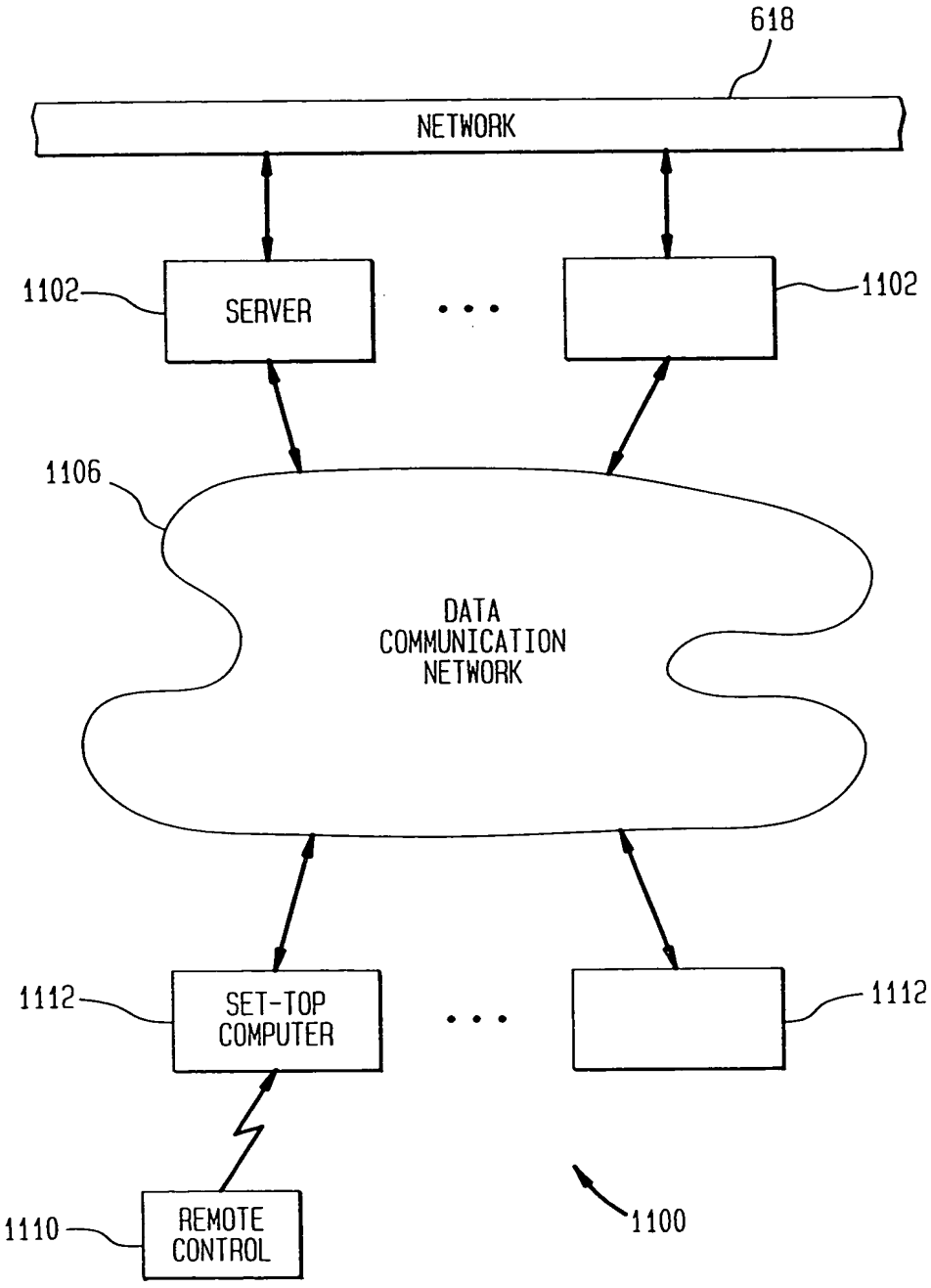
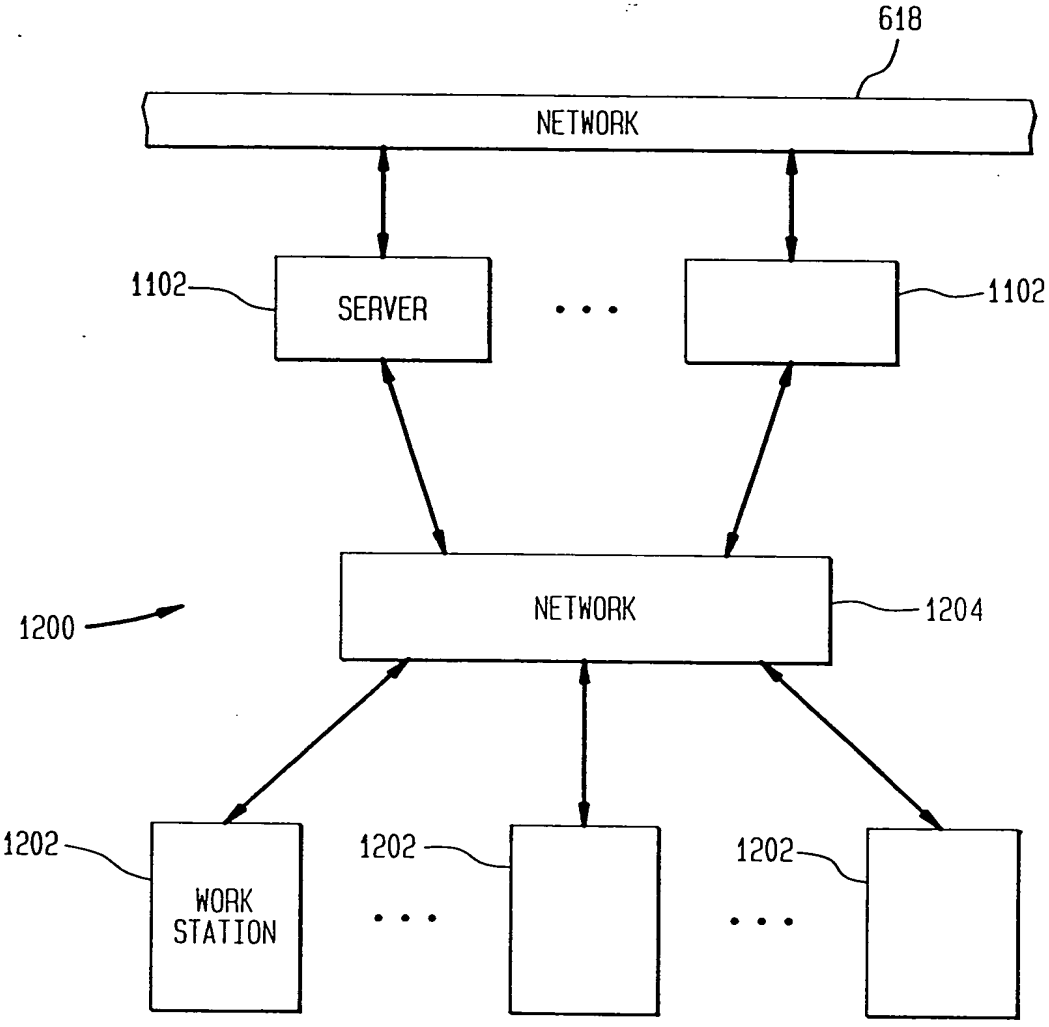

618
NETWORK
1102
SERVER
1102
1106
DATA
COMMUNICATION
NETWORK
1112
SET-TOP
COMPUTER
1112
1110
REMOTE
CONTROL
1100

FIG. 12


618
NETWORK
1102
SERVER
1102
1200
NETWORK
1204
1202
WORK STATION
1202
1202